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EXAMINER

EPPERSON, JON D

ART UNIT	PAPER NUMBER
1639	17

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary <i>File Copy</i>	Application No.	Applicant(s)
	09/578,282	BEECHER ET AL.
	Examiner	Art Unit
	Jon D Epperson	1627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 07 June 2002.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-3,6,12,14,15,52-60 and 70-76 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-3,6,12,14,15,52-60 and 70-76 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. _____.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.

4) Interview Summary (PTO-413) Paper No(s) _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

Detailed Action

Status of the Application

1. Receipt is acknowledged of a response to an election of species, which was dated on June 7, 2002 (Paper No. 12).

Priority Claims

2. Applicant's claim for domestic priority under 35 U.S.C. 119(e) and 120 is acknowledged. The instant case is a continuation of 08/969,227 (now PAT 6,083,697), which in turn claims priority to the provisional applications 60/030,826. The provisional application was reviewed and the priority filing date of **November 14, 1996** is acknowledged.

Status of the Claims

3. Claims 1-3, 6, 12, 14-15, 52-60 and 70-76 are pending in the present application. No claims were added, cancelled or amended.
4. Therefore, claims 1-3, 6, 12, 14-15, 52-60 and 70-76 are examined on the merits in this action. Please note that claims 1-3, 6, 12, 14-15, 52-60 and 70-76 are only examined to the extent of the elected species and/or subject matter (see below).

Response to Restriction and Election of Species with Traverse

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5. Applicant's species election for claims 1-3, 6, 12, 14-15, 52-60 and 70-76 with traverse in Paper No. 12 is acknowledged.

6. The traversal with regard to the species election is on the ground(s) that "the claimed subject matter is searchable without identifying specific chemical structures for a photosensitive compound, a protecting group and a photo activated catalyst" and thus presents "no undue burden" in searching those terms. This argument is not found persuasive.

7. Applicant argues that there is no search burden for the different species. As stated in the restriction requirement (Paper No. 4), the examiner's position is that that species are distinct, each from the other, because the structures and modes of action of each of the compounds encompassed are different. They would also differ in their reactivity and/or mechanism and/or the products made. Moreover, the above species can be separately classified and the searches of these species would not be coextensive. Therefore, the species have different issues regarding patentability and represent patentably distinct subject matter and would constitute a search burden.

8. As a result, the restriction requirement and/or election of species is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

9. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98 (b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, “the list may not be incorporated into the specification but must be submitted in a separate paper.” Therefore, unless the references have been cited by the examiner on the form PTO-892, they have not been considered.

10. The references listed on applicant’s PTO-1449 form have been considered by the examiner. A copy of the form is attached to this Office Action.

Specification

11. The specification contains several misspelled “microliter” which should read “microtiter” on page 2, line 4 and the word “vicinity” which should read “vicinity” on page 3, line 25.

12. The use of the trademarks “GENECHIP” (see page 2, line 11) have been noted in this application. They should be capitalized wherever they appear and be accompanied by the generic terminology. Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner, which might adversely affect their validity as trademarks.

Objections to the Claims

13. Claim(s) 1 is/are objected to because of the following informalities:

A. Claim(s) 60 contain(s) the misspelled word “o-nitrophenylsulfonyl” in the fourth to last line. Correction is requested.

Claims Rejections - 35 U.S.C. 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 1-3, 6, 12, 14-15, 52-60 and 70-76 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Claim 1 b) recites the limitation “protecting group” in the last line of claim 1. However, claim 1 a), the dependent claim, recites the limitation “protective group” in line 1 of claim 1. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in claim 1 b) to “protective group.” Therefore, claim 1 and all of the claims from which claim 1 depends are rejected under 35 USC 112, second paragraph.

B. Claim 2 recites the limitation “radiation sensitive compound” in lines 1-2 of claim 2. However, claim 1, the dependent claim, recites the limitation

“radiation sensitive compound or group” in line 4 of claim 1. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in claim 2 to “radiation sensitive compound or group.” Therefore, claim 2 and all of the claims from which claim 2 depends are rejected under 35 USC 112, second paragraph.

C. Claim 3 recites the limitation “autocatalytic compound” in line 1 of claim 3. However, claim 1, the dependent claim, recites the limitation “autocatalytic compound or group” in line 6 of claim 1. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in claim 3 to “autocatalytic compound or group.” Therefore, claim 3 and all of the claims from which claim 3 depends are rejected under 35 USC 112, second paragraph.

D. Claim 12 recites the limitation “photosensitive compound” in line 1 of claim 12. However, claim 1, the dependent claim, recites the limitation “radiation sensitive compound or group” in line 1 of claim 1. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in claim 12 to “radiation sensitive compound or group.”

Therefore, claim 12 and all of the claims from which claim 12 depends are rejected under 35 USC 112, second paragraph.

E. Claim 14 recites the limitation “removable protecting group” in line 1 of claim 14. However, claim 1, the dependent claim, recites the limitation “protective group” in line 1 of claim 1. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in

claim 14 to “protective group.” Therefore, claim 14 and all of the claims from which claim 14 depends are rejected under 35 USC 112, second paragraph.

F. Claim 15 recites the limitation “photosensitive group” in line 1 of claim 15. However, claim 1, the dependent claim, recites the limitation “radiation sensitive compound or group” in line 1 of claim 1. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in claim 12 to “radiation sensitive compound or group.” Therefore, claim 15 and all of the claims from which claim 15 depends are rejected under 35 USC 112, second paragraph.

G. Claim 15 recites the limitation “autocatalytic group” in line 2 of claim 15. However, claim 1, the dependent claim, recites the limitation “autocatalytic compound or group” in line 6 of claim 1. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in claim 15 to “autocatalytic compound or group.” Therefore, claim 15 and all of the claims from which claim 15 depends are rejected under 35 USC 112, second paragraph.

H. Claim 52 b) recites the limitation “protecting group” in the last line of claim 52. However, claim 52 a), the dependent claim, recites the limitation “protective group” in line 1 of claim 52. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in claim 52 b) to “protective group.” Therefore, claim 52 and all of the claims from which claim 52 depends are rejected under 35 USC 112, second paragraph.

I. Claim 53 recites the limitation “photosensitive compound or group” in line 1 of claim 53. However, claim 52, the dependent claim, recites the limitation “photosensitive acid compound or group” in line 4 of claim 52. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in claim 53 to “photosensitive acid compound or group.” Therefore, claim 53 and all of the claims from which claim 53 depends are rejected under 35 USC 112, second paragraph.

J. Claim 54 recites the limitation “autocatalytic compound” in line 1 of claim 54. However, claim 52, the dependent claim, recites the limitation “autocatalytic compound or group” in line 6 of claim 52. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in claim 54 to “autocatalytic compound or group.” Therefore, claim 54 and all of the claims from which claim 54 depends are rejected under 35 USC 112, second paragraph.

K. Claim 57 recites the limitation “removable protecting group” in line 1 of claim 57. However, claim 52, the dependent claim, recites the limitation “protective group” in line 1 of claim 52. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in claim 57 to “protective group.” Therefore, claim 57 and all of the claims from which claim 57 depends are rejected under 35 USC 112, second paragraph.

L. Claim 58 recites the limitation “photosensitive compound” in line 1 of claim 58. However, claim 52, the dependent claim, recites the limitation “photosensitive acid compound or group” in line 1 of claim 52. There is

insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in claim 58 to “photosensitive acid compound or group.” Therefore, claim 58 and all of the claims from which claim 58 depends are rejected under 35 USC 112, second paragraph.

M. Claim 71 recites the limitation “photosensitive compound or group” in line 1 of claim 71. However, claim 70, the dependent claim, recites the limitation “photosensitive acid compound or group” in line 4 of claim 70. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in claim 71 to “photosensitive acid compound or group.” Therefore, claim 71 and all of the claims from which claim 71 depends are rejected under 35 USC 112, second paragraph.

N. Claim 74 recites the limitation “photosensitive compound” in line 1 of claim 74. However, claim 70, the dependent claim, recites the limitation “photosensitive acid compound or group” in line 4 of claim 70. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends changing the phrase in claim 74 to “photosensitive acid compound or group.” Therefore, claim 74 and all of the claims from which claim 74 depends are rejected under 35 USC 112, second paragraph.

O. For claims 14, 57, the phrase “removable protecting group” is indefinite and/or unclear. For example, when would a protecting group not be “removable?” Consequently, it is not possible to determine the metes and bounds of the invention as claimed. Therefore, claims 14 and 57 and all of the claims

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from which claims 14 and 57 depend are rejected under 35 USC 112, second paragraph.

P. The term "masked acid" in claims 3 and 54 is not defined by the claim or the specification and is indefinite and/or unclear. What set of acids does the term "masked" include? Consequently, it is not possible to determine the metes and bounds of the invention as claimed. Therefore, claim 3 and all dependent claims are rejected under 35 U.S.C. 112, second paragraph.

Q. The phrase "forming a surface" in claims 1, 52 and 70 is not defined by the claim or the specification and is indefinite and/or unclear. What surface is being formed? The word surface denotes the "exterior face of an object." What "object" is being referred to? What is the exterior face? What is the interior face? Consequently, it is not possible to determine the metes and bounds of the invention as claimed. Therefore, claim 1, 52 and 70 and all dependent claims are rejected under 35 U.S.C. 112, second paragraph.

Claims Rejections - 35 U.S.C. 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

15. Claims 1-2, 6, 12, 15, 52, 53, 55, 56, 57, 70-73 are rejected under 35 U.S.C. 102(b) as being anticipated by Holmes, C. P. (US #5,242,974) (Filing Date is **Nov. 22, 1991**; Date of Patent is **Sep. 7, 1993**) in view of Holmes C.P. (US #5,679,773) (Filing Date is **Jan. 17, 1995**; Date of Patent is **Oct. 21, 1997**).

For *claim 1*, Holmes, C. P. teaches methods for the removal of protecting groups in solid-phase synthesis (see Holmes, C. P., column 4, lines 59-64) (A protecting group “may be selectively removed there from for exposure of a reactive group”), which reads on the preamble of claim 1. Furthermore, Holmes, C. P. teaches that the protecting group can be removed from a “synthetic intermediate” on a “surface” (see Holmes, C. P., column 2, lines 44-60) (Holmes states that protecting groups may be used in conjunction with resin bound intermediates to synthesize polymers using “intermediates” of shorter length) (see also Holmes, C. P., column 4, lines 48-50) (A substrate or support is defined as a material or group of materials having a rigid or semi-rigid “surface or surfaces”), which also reads on the preamble and part a) of claim 1. In addition, Holmes, C. P. discloses the “photolabile” NVOC protecting group (see Holmes, C. P., column 18, lines 43-54), which can act as a “radiation sensitive compound”, a “catalyst”, and an “autoctalytic compound”, which reads on parts i) and ii) of claim 1 (see Holmes, C. P. (US # 5,679,773), column 18, lines 43-54) (Holmes, C. P. discloses the inherent properties of the NVOC protecting group teaching that the NVOC can function as a radiation (light) sensitive compound, a catalyst (6,6-bisveratric

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acid catalyzes the formation of more 6,6-bisveratric acid), and an autocatalytic compound (6,6-bisveratric acid catalyzes the removal of the NVOC protecting group)). Finally, Holmes, C. P. teaches “light-directed, spatially-addressable techniques” for removing protecting groups (see Holmes, C. P., column 2 lines 32-32), which reads on claim 1 b) wherein the protecting group is removed by “irradiating at least a part of said surface.”

For **claim 2**, Holmes, C. P. teaches a “photoremovable” NVOC protecting group (see Holmes, C. P., column 6, lines 21-22; column 18, lines 43-54), which reads on claim 2 wherein the radiation sensitive compound of claim 1 is a “photosensitive compound or group.”

For **claim 6**, Holmes, C. P. teaches synthesizing various types of polymers including “peptides” (see Holmes, C. P., column 9, lines 5) (“In a preferred embodiment for peptide synthesis, the protective group PG1 is removed with light”), which reads on claim 6 wherein “said synthesis intermediate is . . . a polypeptide.”

For **claim 12**, Holmes, C. P. teaches a photolabile NVOC protecting group that is cleaved into an acid catalyst (6,6-bisveratric acid) by light (see Holmes, C. P., column 18, lines 43-54), which reads on claim 12 wherein “said photosensitive compound is . . . a photoactivated acid catalyst.”

For **claim 15**, Holmes, C. P. teaches a photolabile NVOC protecting group that is cleaved into an acid catalyst (6,6-bisveratric acid) by light (see Holmes, C. P., column 18, lines 43-54), which reads on claim 15 wherein “said photosensitive

group and said autocatalytic group are parts of the same compound" i.e., they are both derived from the photolabile NVOC protecting groups.

For *claim 52*, Holmes, C. P. teaches methods for the removal of protecting groups in solid-phase synthesis (see Holmes, C. P., column 4, lines 59-64) (A protecting group "may be selectively removed there from for exposure of a reactive group"), which reads on the preamble of claim 52. Furthermore, Holmes, C. P. teaches that the protecting group can be removed from a "synthetic intermediate" on a "surface" (see Holmes, C. P., column 2, lines 44-60) (Holmes states that protecting groups may be used in conjunction with resin bound intermediates to synthesize polymers using "intermediates" of shorter length) (see also Holmes, C. P., column 4, lines 48-50) (A substrate or support is defined as a material or group of materials having a rigid or semi-rigid "surface or surfaces"), which also reads on the preamble and part a) of claim 52. In addition, Holmes, C. P. discloses the "photolabile" NVOC protecting group (see Holmes, C. P., column 18, lines 43-54), which can act as a "radiation sensitive compound", a "catalyst", and an "autoctalytic compound", which reads on parts i) and ii) of claim 1 (see Holmes, C. P. (US # 5,679,773), column 18, lines 43-54) (Holmes, C. P. discloses the inherent properties of the NVOC protecting group teaching that the NVOC can function as a radiation (light) sensitive compound, a catalyst (6,6-bisveratric acid catalyzes the formation of more 6,6-bisveratric acid), and an autocatalytic compound (6,6-bisveratric acid catalyzes the removal of the NVOC protecting group)). Finally, Holmes, C. P. teaches "light-directed, spatially-addressable techniques" for removing protecting groups (see Holmes, C. P., column 2 lines

32-32), which reads on claim 52 b) wherein the protecting group is removed by “irradiating at least a part of said surface.”

For **claim 53**, Holmes, C. P. teaches a “photoremovable” NVOC protecting group that is cleaved into an acid catalyst i.e., 6,6-bisveratric acid (see Holmes, C. P., column 6, lines 21-22; column 18, lines 43-54), which reads on claim 53 wherein “the photosensitive compound or group is a photoactivated acid catalyst.”

For **claim 55**, Holmes, C. P. teaches that the protecting group (PG) can be on a “tether” molecule (see column 2, line 55), which reads on claim 55 wherein the synthesis intermediate is a “linker” molecule.

For **claim 56**, Holmes, C. P. teaches synthesizing various types of polymers including “peptides” (see Holmes, C. P., column 9, lines 5) (“In a preferred embodiment for peptide synthesis, the protective group PG1 is removed with light”), which reads on claim 56 wherein “said synthesis intermediate is ... a polypeptide.”

For **claim 57**, Holmes, C. P. teaches an acid labile NVOC protecting group (see Holmes, C. P., column 18, lines 43-54), which reads on claim 57 wherein “the removable protecting group is an acid removable group.”

For **claim 70**, Holmes, C. P. teaches methods for the removal of protecting groups in solid-phase synthesis (see Holmes, C. P., column 4, lines 59-64) (A protecting group “may be selectively removed there from for exposure of a reactive group”), which reads on the preamble of claim 70. Furthermore, Holmes, C. P. teaches that the protecting group can be removed from a “synthetic

intermediate" on a "surface" (see Holmes, C. P., column 2, lines 44-60) (Holmes states that protecting groups may be used in conjunction with resin bound intermediates to synthesize polymers using "intermediates" of shorter length) (see also Holmes, C. P., column 4, lines 48-50) (A substrate or support is defined as a material or group of materials having a rigid or semi-rigid "surface or surfaces"), which also reads on the preamble and part a) of claim 70. In addition, Holmes, C. P. discloses the "photolabile" NVOC protecting group (see Holmes, C. P., column 18, lines 43-54), which can act as a "radiation sensitive compound", a "catalyst", and an "autoctalytic compound", which reads on parts i) and ii) of claim 70 (see Holmes, C. P. (US # 5,679,773), column 18, lines 43-54) (Holmes, C. P. discloses the inherent properties of the NVOC protecting group teaching that the NVOC can function as a radiation (light) sensitive compound, a catalyst (6,6-bisveratic acid catalyzes the formation of more 6,6-bisveratic acid), and an autocatalytic compound (6,6-bisveratic acid catalyzes the removal of the NVOC protecting group)). Finally, Holmes, C. P. teaches "light-directed, spatially-addressable techniques" for removing protecting groups (see Holmes, C. P., column 2 lines 32-32), which reads on claim 70 b) wherein the protecting group is removed by "irradiating at least a part of the surface."

For *claim 71*, Holmes, C. P. teaches a "photoremovable" NVOC protecting group that is cleaved into an acid catalyst i.e., 6,6-bisveratic acid (see Holmes, C. P., column 6, lines 21-22; column 18, lines 43-54), which reads on claim 71 wherein "the photosensitive compound or group is a photoactivated acid catalyst."

For **claim 72**, Holmes, C. P. teaches that the protecting group (PG) can be on a “tether” molecule (see column 2, line 55), which reads on claim 55 wherein the synthesis intermediate is a “linker” molecule.

For **claim 73**, Holmes, C. P. teaches synthesizing various types of polymers including “peptides” (see Holmes, C. P., column 9, lines 5) (“In a preferred embodiment for peptide synthesis, the protective group PG1 is removed with light”), which reads on claim 73 wherein “said synthesis intermediate is ... a polypeptide.”

16. Claims 1-2, 6, 12, 15, 52, 53, 55, 57, 60, 70-72, 76 are rejected under 35 U.S.C. 102(b) as being anticipated by MacDonald et al, [ACC. Chem. Res. 27(6):151(1994)].

For **claim 1**, MacDonald et al teaches the removal of the t-BOC protecting groups (see MacDonald et al, page 152, column 2, last paragraph), which reads on the preamble of claim 1 wherein a protective group is “removed” from a synthetic intermediate. Furthermore, MacDonald et al teaches that the protecting group can be removed from a “synthetic intermediate” on a “surface” (see MacDonald et al, page 152, column 2, last paragraph; page 153, column 1, figure 2) (disclosing a poly[4-(terbutoxycarbonyl) poly-carbonate-oxy]styrene layer, which is a “synthesis intermediate” having a protecting t-BOC group, and a lithographic surface for making a semiconductor device), which also reads on the preamble and part a) of claim 1. In addition, MacDonald et al discloses triphenylsulfonium hexafluoroantimonate (acts as a radiation sensitive compound)

to generate in the presence of light trifluoromethane sulfonic acid (acts as a catalyst) which can cleave the t-BOC protecting group and can also cleave more triphenylsulfonium hexfluoroantimonate (acts as an autocatalytic compound) i.e., triphenylsulfonium hexfluoroantimonate functions as both a radiation sensitive compound and an autocatalytic compound (see MacDonald et al, page 152, last paragraph to page 153, first column), which reads on parts i) and ii) of claim 1. Finally, MacDonald et al teaches “light-directed, spatially-addressable techniques” for removing protecting groups (see MacDonald et al, page 153, figure 2) (showing the use of a mask to direct the light catalyzed hydrolysis of the t-BOC).

For *claim 2*, MacDonald et al teaches triphenylsulfonium hexfluoroantimonate as a light sensitive compound that generates an acid catalyst upon exposure to light (see MacDonald et al, page 152, last paragraph), which reads on claim 2 wherein the radiation sensitive compound of claim 1 is a “photosensitive compound or group.”

For *claim 6*, MacDonald et al teaches synthesizing various types of polymers including “peptides” (see MacDonald et al, page 152, last paragraph), which reads on claim 6 wherein “said synthesis intermediate is ... a polypeptide.”

For *claim 12*, MacDonald et al teaches triphenylsulfonium hexafluoroantimonate that is converted via light to trifluoromethane sulfonic acid, which reads on claim 12 wherein “said photosensitive compound is ... a photoactivated acid catalyst.”

For *claim 15*, MacDonald et al teaches triphenylsulfonium hexafluoroantimonate (acts as a radiation sensitive compound) to generate in the presence of light trifluoromethane sulfonic acid (acts as a catalyst) which can cleave the t-BOC protecting group and can also cleave more triphenylsulfonium hexafluoroantimonate (acts as an autocatalytic compound) i.e., triphenylsulfonium hexafluoroantimonate functions as both a radiation sensitive compound and an autocatalytic compound (see MacDonald et al, page 152, last paragraph to page 153, first column), which reads on claim 15 wherein “said photosensitive group and said autocatalytic group are parts of the same compound.”

For *claim 52*, MacDonald et al teaches the removal of the t-BOC protecting groups (see MacDonald et al, page 152, column 2, last paragraph), which reads on the preamble of claim 52 wherein a protective group is “removed” from a synthetic intermediate. Furthermore, MacDonald et al teaches that the protecting group can be removed from a “synthetic intermediate” on a “surface” (see MacDonald et al, page 152, column 2, last paragraph; page 153, column 1, figure 2) (disclosing a poly[4-(terbutoxycarbonyl) poly-carbonate-oxy]styrene layer, which is a “synthesis intermediate” having a protecting t-BOC group, and a lithographic surface for making a semiconductor device), which also reads on the preamble and part a) of claim 52. In addition, MacDonald et al discloses triphenylsulfonium hexafluoroantimonate (acts as a radiation sensitive compound) to generate in the presence of light trifluoromethane sulfonic acid (acts as a catalyst) which can cleave the t-BOC protecting group and can also cleave more triphenylsulfonium hexafluoroantimonate (acts as an autocatalytic compound) i.e.,

triphenylsulfonium hexafluoroantimonate functions as both a radiation sensitive compound and an autocatalytic compound (see MacDonald et al, page 152, last paragraph to page 153, first column), which reads on parts i) and ii) of claim 52. Finally, MacDonald et al teaches “light-directed, spatially-addressable techniques” for removing protecting groups (see MacDonald et al, page 153, figure 2) (showing the use of a mask to direct the light catalyzed hydrolysis of the t-BOC).

For **claim 53**, MacDonald et al teaches triphenylsulfonium hexafluoroantimonate that is converted via light to trifluoromethane sulfonic acid (see MacDonald et al, page 152 second column), which reads on claim 53 wherein “said photosensitive compound is ... a photoactivated acid catalyst.”

For **claim 55**, MacDonald et al teaches a poly[4-(terbutoxycarbonyl) poly-carbonate-oxy]styrene which possesses a “phenol linker” to the backbone (see MacDonald et al, Figure 3), which reads on claim 55 wherein the synthesis intermediate is a “linker” molecule.

For **claim 57**, MacDonald et al teaches the t-BOC protecting group that can be hydrolyzed in acid (see MacDonald et al, page 152, second column), which reads on claim 57 wherein “the removable protecting group is an acid removable group.”

For **claim 60**, MacDonald et al teaches the t-BOC protecting group (see MacDonald et al, page 152, second column), which reads on claim 60 wherein “the protecting group is selected from ... tert-butyloxycarbonyl.”

For *claim 70*, MacDonald et al teaches the removal of the t-BOC protecting groups (see MacDonald et al, page 152, column 2, last paragraph), which reads on the preamble of claim 70 wherein a protective group is “removed” from a synthetic intermediate. Furthermore, MacDonald et al teaches that the protecting group can be removed from a “synthetic intermediate” on a “surface” (see MacDonald et al, page 152, column 2, last paragraph; page 153, column 1, figure 2) (disclosing a poly[4-(terbutoxycarbonyl) poly-carbonate-oxy]styrene layer, which is a “synthesis intermediate” having a protecting t-BOC group, and a lithographic surface for making a semiconductor device), which also reads on the preamble and part a) of claim 70. In addition, MacDonald et al discloses triphenylsulfonium hexafluoroantimonate (acts as a radiation sensitive compound) to generate in the presence of light trifluoromethane sulfonic acid (acts as a catalyst) which can cleave the t-BOC protecting group and can also cleave more triphenylsulfonium hexfluoroantimonate (acts as an autocatalytic compound) i.e., triphenylsulfonium hexfluoroantimonate functions as both a radiation sensitive compound and an autocatalytic compound (see MacDonald et al, page 152, last paragraph to page 153, first column), which reads on parts i) and ii) of claim 70. Finally, MacDonald et al teaches “light-directed, spatially-addressable techniques” for removing protecting groups (see MacDonald et al, page 153, figure 2) (showing the use of a mask to direct the light catalyzed hydrolysis of the t-BOC).

For *claim 71*, MacDonald et al teaches triphenylsulfonium hexafluoroantimonate that is converted via light to trifluoromethane sulfonic acid,

which reads on claim 72 wherein "said photosensitive compound is ... a photoactivated acid catalyst."

For **claim 72**, MacDonald et al teaches a poly[4-(terbutoxycarbonyl) poly-carbonate-oxy]styrene which possesses a "phenol linker" to the backbone (see MacDonald et al, Figure 3), which reads on claim 72 wherein the synthesis intermediate is a "linker" molecule.

For **claim 76**, MacDonald et al teaches the t-BOC protecting group (see MacDonald et al, page 152, second column), which reads on claim 60 wherein "the protecting group is selected from ... tert-butyloxycarbonyl."

Status of Claims/Conclusion

17. No claims are allowed.
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon D Epperson whose telephone number is (703) 308-2423. The examiner can normally be reached Monday-Friday from 8:30 to 4:30.
19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on (703) 308-4537. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9307 for After Final communications.

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20. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2439.

Jon D. Epperson, Ph.D.
October 25, 2002

BENNETT CELSA
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Bennett CELSA". The signature is fluid and cursive, with "Bennett" on top and "CELSA" on the line below it.